



Hats off to

Red Hat's Hat!

The Linux world is talking about the latest release, and users are yearning to check it out. It won the best distribution award in Linux Asia 2006. And is undoubtedly one of the most popular distros today. Yes. We are talking about Fedora Core! Ever wondered how the Fedora project was started and how it's journeyed this far to win over your hearts? Read on to find out...

If you thought Hawaii was nothing but a holiday destination, it is time to recalibrate your opinions about the idyllic islands. It's got a Linux connection too. Aloha! Hawaii is where the original Fedora project was born.

In 2002-03, Warren Togami, then a student at Hawaii, was working on LTSP clients (K12LTSP, which is now a Fedora derivative). After going through the inefficient and redundant process of building packages from the source every time they were required, he decided to



solve the problem in an open manner and formed the original Fedora Project as a central add-on repository for Red Hat Linux. “As opposed to many other third-party repositories, this was not a one-man show and soon grew into a large community providing hundreds of packages with Apt on rpm at fedora.us—a site which is now defunct,” says Rahul Sundaram, Fedora ambassador, India.

Incidentally, a Fedora is a hat that was in fashion early in the 20th century. It is usually made of a soft material like felt, and is creased along its length and pinched on both sides—it’s the hat used in Red Hat’s logo. Togami called the original effort Fedora to provide a sense of association with Red Hat Linux.

Red Hat finds its hat

In 2003, Red Hat cast its eyes on the enterprise segment and released Red Hat Enterprise Linux 2.1 based on Red Hat Linux 7.3. It continued its efforts on the Red Hat Linux distro until version 9, after which it was merged with the Fedora Project.

“Red Hat Linux was a boxed retail product but retail channels were not used to a product that was released almost every six months and had a lifecycle as short as one year or so. Many end users would buy outdated Red Hat Linux 7.3 or 6.x boxes long after it had reached the end of its life, not realising that there were newer versions available, and expected Red Hat to provide support for the outdated product they had purchased. This led to frustration on both sides,” explains Sundaram. “Red Hat Linux was not a profitable business despite the enormous amount of brand loyalty it enjoyed. Developer costs, ftp downloads, etc, led to a price of around \$ 75, and with installation support, it went up to even \$ 85. Red Hat saw only around \$ 35 and the rest went down channel costs and margins. All of the revenue came in through limited support contracts, which were not by themselves at a sustainable level.”

As Sundaram explains, Red Hat

DOES FEDORA HAVE A MASCOT?

We all love the cute dragons and foxes and penguins that OSS projects use as their mascots. But what about Fedora; does it have a lovable mascot? “Discussions on creating a mascot pop up now and then in Fedora marketing and more recently in the Fedora art lists (<http://fedoraproject.org/wiki/Artwork>). We saw some proposals by various artists. Some of them were quite interesting but we haven’t yet seen strong appeals towards creating a mascot yet,” clarifies Sundaram. “But,” he adds, “it is worth noting that we do have a logo (<http://fedoraproject.org/wiki/Logo>) that we designed and included in Fedora Core 5 and later.”



Linux had to choose between enterprises that wanted spaced-out releases with a longer lifecycle, and others that wanted faster release cycles and updates. In 2003, Red Hat decided to meet the needs of both sets of users—who were miles apart in terms of expectations! Red Hat formed the Red Hat Linux Project and made Red Hat Linux a general-purpose operating system. This was developed and maintained transparently with community participation, and available as a free download, having been moved out of the retail business. On the retail side, they focused on the Red Hat Enterprise Linux (RHEL) product, with targeted and limited focus on enterprise-level customers.

“After the Red Hat Linux Project was formed, Togami proposed a merger of *fedora.us* and the Red Hat Linux Project with the aim of uniting and leapfrogging community participation. The proposal was accepted by Red Hat, and Togami was hired to initiate the efforts,” says Sundaram about the birth of the Fedora project as we know it today. He adds, “The *fedora.us* community was merged with Fedora Extras as a community-based

complementary repository to Fedora Core. Fedora Core was developed and maintained by Red Hat.”

A mutually beneficial relationship

Red Hat had created an initial set of goals for the Fedora Project when the merger occurred, but had not planned detailed roadmaps for the transition beyond the merger. As a result, it was not able to gauge the expectations of users and people interested in participating. “The close development coordination between Fedora and RHEL led to a false impression and to criticism of Fedora merely being a providing ground for a commercial product,” recounts Sundaram.

He refutes this misconception saying, “Fedora has active sponsorship and technology leadership, driven by Red Hat, while Red Hat gains community mind-share and participation. The fact is that the technology flows both ways—from Fedora to RHEL and vice-versa.” Sundaram goes on to illustrate the mutual benefits the two enterprises derive from each other. “Red Hat cannot rely solely on the community

INTERESTING!

Fedora focuses on education through the ongoing adoption of K12LTSP and open content through the adoption of Planet CCRMA. It also has an initiative to encourage the participation of women in free software projects. Check out...

- <http://www.redhat.com/mailman/listinfo/fedora-education-list>
- <http://www.redhat.com/mailman/listinfo/fedora-music-list>
- <http://fedoraproject.org/wiki/Women>

for feedback on its enterprise-level products because of the level of hardware needed (e.g., SAN storage) for providing feedback on some of the technologies like cluster-suite and GFS. Also, there are architectures like IBM mainframes that Red Hat Enterprise Linux supports but the Fedora community sees no interest in! Feedback from Fedora is very helpful to understand and implement a supportable subset of Fedora derived as RHEL. Red Hat implements some of the tougher, expensive and boring details like GCC, Glibc, Kernel, NPTL or SELinux, while the community works on more fun and exciting projects like Fedora Artwork! This is the mutual value proposition that Fedora benefits from."

Though the development tree (also known as rawhide) has always been open, the Fedora Project went further with public release schedules and more transparency in development. The goals were to be an open development lab, in the forefront of research and the development of Red Hat, to garner Red Hat engineering investments to improve FOSS and to invite the community to work together.

Fedora is currently the basis for over seventy public derivatives

including, but certainly not limited to, Red Hat Enterprise Linux.

A business model to be proud of

According to Sundaram, both, the business-model that Red Hat originally established through Red Hat Enterprise Linux and the community-model established by Fedora (which was initially criticised), have clearly been emulated, adopted and improvised on by many other projects.

SLES and OpenSUSE, Solaris and OpenSolaris, Linspire and Freespire, and more recently, MySQL Enterprise and Community editions, are examples of similar business models.

Sundaram adds, with obvious pride, "I am very proud and amazed that Red Hat had the vision and leadership to create this bold (and at that time very risky) and successful effort that has permanently changed the dynamics of the open source world and rippled throughout the industry. Imitation as they say is the best form of flattery. We are flattered indeed."

Fedora grows with greater community participation

For a couple of releases, community participation was limited to providing

bug reports and patches. Yum was adopted as an alternative to resolve dependencies transparently and promptly, early in the release, providing a base to create open software repositories.

Direct community participation was created after a pre-release of Fedora Extras for Fedora Core 3, thanks to the self-driven efforts of Seth Vidal, a Yum developer and systems administrator at Duke University.

"<http://fedoraproject.org/wiki> was established at this time as a developer collaboration medium and is wildly successful today with active participation from hundreds of contributors. This is our primary Web face for the world now," says Sundaram.

Over time, community participation in the Fedora project has grown phenomenally. "The current list includes 227 Fedora Extras contributors, 1159 source rpms in the core as of FC6T3 and 2208 source rpms (note that a single rpm can build several binary rpms), 816 users in the Fedora account system and 724 users who have signed our contributor's licence agreement, which is used to ensure the origin of a clean code-base,"

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—**RAHUL SUNDARAM**, Fedora ambassador, India



recounts Sundaram, with understandable pride.

Landmarks on the journey to success

Fedora Core 3 became the first mainstream operating system in the world to provide a mandatory access control system by default using SELinux, and current Fedora releases still remain the best implementers of this system ever.

The Fedora Legacy community was created by Jesse Keating (who was working for PogoLinux, an OEM of Fedora) as a means to providing a longer maintenance life cycle, and soon Fedora Legacy became a default but disable-by-default repository in Fedora Core 5, which was widely recognised as a very robust release. As for Jesse Keating, Red Hat hired him as the Fedora Release Engineer!

With Fedora Core 4, Fedora Extras became a default repository. Over time, Fedora Extras packaging guidelines became just Fedora packaging guidelines in an effort by the Fedora Core team to provide greater consistency between these two repositories. The Fedora packaging committee was formed to arbitrate and develop the guidelines further. The Fedora Extras steering committee leading the Fedora Extras effort transitioned from being a meritocracy to an elected democratic body.

Another major landmark was the formation of the Fedora Ambassadors Project, circa 2005, to take the concepts of open source and Linux, and Fedora in specific, to the masses. That year, the Fedora Ambassadors steering committee also moved to an elected democratic model.

THE FEDORA CORE RELEASE TIMELINE

Version	Name	Date
6	Zod	October 24, 2006
5	Bordeaux	March 20, 2006
4	Stentz	June 13, 2005
3	Heidelberg	November 8, 2004
2	Tettnang	May 18, 2004
1	Yarrow	November 6, 2003

Source: http://en.wikipedia.org/wiki/Fedora_core



More recently, the Fedora Documentation Project created an exemplary set of community documentation, including the installation and Yum guide and release notes. It was based on what the team calls 'design thinking'.

"And we've also announced the creation of a community-based, open source, comprehensive, automated testing suite for Fedora," adds Sundaram.

And recently, we have had FC 6! "Fedora Core 6 goes a step further by extending the abilities of the installer to additional Yum repositories like Core updates, Fedora Extras, third-party or even custom repositories.

This release provides the best open, core and graphical virtualisation capabilities," says Sundaram.

He adds that the response to the Fedora Core 6 release was phenomenal. For a while, it generated enough traffic to bring down redhat.com (Red Hat infrastructure) and fedoraproject.org (Duke University infrastructure) at the same time.

The Fedora Project Board initiated a licensing audit before this release of Fedora Core, ensuring that they only provided free software as defined by the FSF, reinforcing its staunch support for free software.

Also, the Fedora Project Board is currently leading an effort to merge

Enterprise Mail Server, Linux SBS Server,
Anti SPAM, Antivirus and HTTP Filtering.

Bandwidth Management, Internet Access Control,
Content Filtering, Web Access Reporting.

Customised Linux Product Development.

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Fedora Core and Extras to form a single central repository with unified distributed infrastructure and policies, thereby letting a broader community participate in more active development.

Fedora Foundation: To be or not to be

In June 2005, Red Hat announced its intentions to form a Fedora Foundation. Although a lot of effort was pumped into it, the Foundation never saw the light of day. It was then felt that a restructuring of the Fedora Project, which enhanced leadership from within the community, would be more effective. As a result, this year the Fedora Project Board was formed, comprising members from Red Hat and the community.

An announcement from Red Hat explains the situation more vividly: “When we announced the Foundation, it was with a very specific purpose, and in a very specific context. The announcement was made by Mark Webbink, who has been the intellectual property guru at Red Hat for a long time now. His stated goal for the Foundation was to act as a repository for patents that would protect the interests of the open source community.”

“Once we announced the intention to form a Foundation, people inside and outside of Red Hat were interested in working beyond the stated purpose—an intellectual property repository—and instead saw this new Foundation as a potential tool to solve all sorts of Fedora-related issues. Every Fedora issue became a nail for the Foundation hammer, and the scope of the Foundation quickly became too large for efficient progress.”

“A team moved forward to create the Foundation itself. We created the legal entity, came up with some very basic and flexible bylaws, and appointed a board to run it temporarily. This all happened pretty quickly, because this was the easy part. We had articles of incorporation in September 2005.”

“Then came the hard part:

articulating the precise responsibilities of the Foundation. This conversation took months, but ultimately it came back around, again and again, to a single question: What could a Fedora Foundation accomplish that the Fedora Project, with strong community leadership, could not accomplish?”

As those involved probed deeper into this question, they became more and more convinced that the Fedora Foundation was not the right answer. The arguments of the Devil’s Advocate are indeed interesting. Check out <http://www.redhat.com/archives/fedora-announce-list/2006-April/msg00016.html>

Currently, the governance model of the Fedora Project is like this: the Fedora Project Board is at the top, then you have the various Projects (such as Fedora Core, Fedora Extras, Fedora Documentation, Fedora Ambassadors) and the steering committees, and most important are the contributors and users in the community.

Fedora in India

Talking about Fedora’s popularity in India and what was being done to promote its adoption, Sundaram says, “We see magazines like *LINUX For You*, PC Quest, Digit etc. distribute Fedora on a regular basis. We see active discussions about releases in Linux user groups. We hear from many organisations about major production-level deployments, but since this is free software there are many, many users we haven’t heard from. This is the result of the freedom we offer them in our software. Starting from Fedora Core 6, we are keeping a tab on the number of users we get update requests from, in our central mirror list. We are planning to create an opt-in mechanism for counting users better in the next release of Fedora. So, the next time we will have a better idea of how many users we have.”

He continues, “We also attend events like Foss.in and LinuxAsia. Last year, we had daylong talks about Fedora in LinuxAsia 2006 and won the


best distribution award. This year, too, we will have a community presence at the upcoming Foss.in in November. We now have an Indian division of our Free Media programme and will be scaling up our operations shortly.”

He adds, “There are many more things planned and there is always a natural organic grassroots level growth of the Fedora community. The current level of contributors from India is embarrassingly low, as in any free software or open source project. I would personally like to improve that and have been putting some efforts into it. It is high time Indians start contributing more, collectively, instead of merely consuming,” Sundaram says, a bit worriedly.

Not resting on their laurels

“Fedora is very much the technology leader in developing and adopting the latest open source technologies. Our focus and advancements in core areas like Kernel, GCC, Glibc and desktop efforts like HAL, Dbus, Cairo, Network Manager and, recently, AIGLX, Security etc, propel our primary mission of the rapid progress of free software and open content,” Sundaram says.

He, however, clearly asserts that Fedora is not going to rest on its laurels. “There is a long way to go towards establishing our original vision. And the recent efforts of the Fedora Project Board to merge Core and Extras will be another major milestone, and probably set a trend yet again,” he concludes.

Based on an interview with Rahul Sundaram, Fedora Ambassador—India 

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